WHAT IS CLAIMED IS:

1. A diffractive optical element comprising:

   a first diffractive element,

   a second diffractive element that is made of a material different from the first diffractive element and is cemented with the first diffractive element, and

   a diffraction grating formed on the cemented surface,

   wherein a shade is formed on a wall surface in each groove of the diffraction grating.

2. The diffractive optical element according to claim 1, wherein the material of one of these two diffractive elements is glass for glass molding, and that of the other diffractive element is resin.

3. The diffractive optical element according to claim 2, wherein one of these two diffractive elements satisfies the following two conditional equations:

   $1.55 \leq ndG \leq 1.70$

   $50 \leq \nu dG \leq 65$

   where ndG denotes refractive index of one of these two diffractive elements at d-line, and ν dG denotes Abbe number of one of these two diffractive elements at d-line; and

   wherein the other of these two diffractive elements satisfies the

following two conditional equations:

$$1.50 \le ndR \le 1.65$$

$$\nu dR \le 45$$

where ndR denotes refractive index of the other of these two diffractive elements at d-line, and ν dR denotes Abbe number of the other of these two diffractive elements at d-line.

4. The diffractive optical element according to claim 3, wherein the minimum pitch of the diffraction grating grooves is 50 μ m or more.

5. The diffractive optical element according to claim 4, wherein the wall height of the diffraction grating groove is 20 μ m or less.

6. The diffractive optical element according to claim 3, wherein the wall height of the diffraction grating groove is 20 μ m or less.

7. The diffractive optical element according to claim 2, wherein the minimum pitch of the diffraction grating grooves is 50 μ m or more.

8. The diffractive optical element according to claim 7, wherein the wall height of the diffraction grating groove is 20 μ m or less.

9. The diffractive optical element according to claim 2, wherein the wall height of the diffraction grating groove is 20 μ m or less.

10. The diffractive optical element according to claim 1, wherein one of these two diffractive elements satisfies the following two conditional equations:

$$1.55 \leq ndG \leq 1.70$$

$$50 \leq \nu dG \leq 65$$

where ndG denotes refractive index of one of these two diffractive elements at d-line, and ν dG denotes Abbe number of one of these two diffractive elements at d-line; and

wherein the other of these two diffractive elements satisfies the following two conditional equations:

$$1.50 \leq ndR \leq 1.65$$

$$\nu dR \leq 45$$

where ndR denotes refractive index of the other of these two diffractive elements at d-line, and ν dR denotes Abbe number of the other of these two diffractive elements at d-line.

11. The diffractive optical element according to claim 10, wherein the minimum pitch of the diffraction grating grooves is 50 μ m or more.

12. The diffractive optical element according to claim 11, wherein the wall height of the diffraction grating groove is 20 μ m or less.

13. The diffractive optical element according to claim 10, wherein the

wall height of the diffraction grating groove is 20 μm or less.

14. The diffractive optical element according to claim 1, wherein the minimum pitch of the diffraction grating grooves is 50 μm or more.

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15. The diffractive optical element according to claim 14, wherein the wall height of the diffraction grating groove is 20 μm or less.

16. The diffractive optical element according to claim 1, wherein the wall height of the diffraction grating groove is 20 μm or less.

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17. A diffractive optical element comprising:

a first diffractive element on which a first diffraction grating is formed; and

a second diffractive element made of a material different from that of the first diffractive element on which a second diffraction grating having a different wall height from that of the first diffraction grating is formed; and

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wherein the surface on which the first diffraction grating is formed and the surface on which the second diffraction grating is formed are facing each other with a given surface; and

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wherein a shade is formed on a wall surface in each groove of the first diffraction grating, and a shade is formed on a wall surface in each groove of the second diffraction grating.

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18. The diffractive optical element according to claim 17, wherein both the first diffractive element and the second diffractive element are made of resin.

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19. The diffractive optical element according to claim 18, wherein the minimum pitch of the first diffraction grating grooves and the second diffraction grating grooves is 50 μm or more.

10 20. The diffractive optical element according to claim 17, wherein the minimum pitch of the first diffraction grating grooves and the second diffraction grating grooves is 50 μm or more.

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